**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Practice: Sequences and Series**

Find the pattern and write the next 3 terms in the sequence. Then write the equation for the sequence (use your formulas)

1. 8, 12, 16, 20, 24, \_\_\_\_, \_\_\_\_, \_\_\_\_ pattern: \_\_\_\_\_\_\_\_\_\_ equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 10, 7, 4, 1, -2, \_\_\_\_, \_\_\_\_, \_\_\_\_ pattern: \_\_\_\_\_\_\_\_\_\_ equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 3, 15, 75, 375, \_\_\_\_, \_\_\_\_, \_\_\_\_ pattern: \_\_\_\_\_\_\_\_\_\_ equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 360, 180, 90, 45, \_\_\_\_, \_\_\_\_, \_\_\_\_ pattern: \_\_\_\_\_\_\_\_\_\_ equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 4, -8, 16, -32, 64, \_\_\_\_, \_\_\_\_, \_\_\_\_ pattern: \_\_\_\_\_\_\_\_\_\_ equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 8, , , 10, , \_\_\_\_, \_\_\_\_, \_\_\_\_ pattern: \_\_\_\_\_\_\_\_\_\_ equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the following terms in the sequences (use the equations you wrote above)

1. For #1 above, find the 20th term
2. For #2 above, find the 9th term
3. For #3 above, find the 12th term
4. For #4 above, find
5. For #5 above, find
6. For #4 above, find

For the sequences below, write out the first 10 terms.

Determine if the following are series or not.

1. 3, 5, 7, 9, 11, …
2. 6, 8, 10, 12, 14
3. …5, 6, 7, 8, 9, …
4. 1, 2, 3, 4, 5, …, 27, 28, 29, 30

Write the following in sum notation (find the equation for the series, then put it in the sum notation we learned)

1. 6, 12, 18, 24, 30, 36
2. 10 + 13+ 16+ 19 + 22
3. 64, -32, 16, -8, 4, -2
4. 2, 6, 18, 54, 162, 486, 1458, 4374

Find the sum of the following. You can use your formulas for some of them!

1. 
2. 
3. 
4. 
5. 
6. 
7. 

Find the sum of the following series, up to the term given.

Steps: 1) Write the equation 2) Write in sum notation 3) Find sum (use formula)

1. 8, 15, 22, 29, 36 to the 20th term
2. 3, 12, 48, 192, 768, 3072 to the 15th term